

**REMARKS**

Claims 8 and 14 currently appear in this application. The Office Action of March 17, 2008, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

**Amendments**

The subject matter of claim 19 has been incorporated into claim 8, and claim 19 has been cancelled.

**Rejections under 35 U.S.C. 112**

Claim 19 is rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement. The Examiner states that there is no basis for the 500 nm language in the specification.

This rejection is respectfully traversed. Claim 19 has been cancelled, but the subject matter thereof has been incorporated into claim 8. It is respectfully submitted that the recited absorption maximum is not new matter, because an absorption maximum longer than 500 nm is an inherent property of the compounds represented by Chemical Formulae 20 to 38,

disclosed at pages 20-25 of the specification as filed.  
Attached hereto is a table showing the absorption maxima of the compounds represented by Chemical Formulae 20 to 38 are shown. From this it can readily be seen that the compounds all have absorption maxima longer than 5-nm.

It should also be noted that the description at page 13, lines 18-20, states that the absorption maxima of compounds of Chemical formula 20-38 have absorption maxima at wavelengths longer than 450 nm.

#### Art Rejections

Claims 8, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al., JP 11-053758 and Usami et al., '112, in view of Nanba et al., JP 60-204396, Kanno '467 and Ootaguro-882.

This rejection is respectfully traversed.

First of all, claim 19 has been cancelled, so the rejection is moot with respect to claim 19.

The optical recording method as recited in amended claim 8 is characterized by the following features:

- (i) using a laser beam with an oscillation wavelength of 405 nm as a writing light;

- (ii) writing information on a recording layer with a writing light having a wavelength shorter than an absorption maximum of an organic dye compounds in the recording layer;
- (iii) using in the recording layer the organic dye compounds represented by any one of Formulae 1 to 3, which has an absorption maximum at a wavelength longer than 500 nm, and which absorbs light having a wavelength of 390 to 450 nm;
- (iv) the recording layer consists essentially of a light-resistance improver and the organic dye compound;
- (v) having a recording capacity of over 15 GB per side, when formed into a disk 12 cm in diameter;
- (vi) having a pit/groove width of below 1 micron/pit at a track pitch of below 1 micron.

It is respectfully submitted that the combination of Maeda, Usami, Nanba, Kanno and Ootaguro neither teaches nor suggests an optical recording medium characterized by features

(i) to (vi) as described above. Maeda neither discloses nor suggests feature (i) as a recording mechanism. Further, Maeda neither discloses nor suggests feature (iii), because absorption maxima of the cyanine dyes (a to e) disclosed in Maeda are almost in the range of 400 to 470 nm (please see paragraph 0012 of Maeda), and an optical recording medium using cyanine dyes is one on which information is recorded with a laser beam having an oscillation wavelength of 515 nm, as disclosed in paragraph 0012 of Maeda.

Usami teaches feature (vi). However, Usami does not teach features (i) through (v). Because of this, it is respectfully submitted that the recording mechanism in Usami is completely different from that of the claimed invention, and that one skilled in the art would not combine Usami's disclosure with the other cited references to produce a recording medium as claimed herein.

Nanba discloses various kinds of lasers, but Nanba fails to disclose a laser having an oscillation wavelength of 450 nm. Furthermore, it is apparent that Nanba teaches nothing about an optical recording medium having such high recording capacity as recited in feature (v), as Nanba was

published in 1984, long before such high recording capacities were even envisioned.

In the meantime, the cyanine dyes disclosed in Nanba are said to have an absorption maximum at a wavelength in the range of  $-49\text{ nm}$  to  $+70\text{ nm}$  of the wavelength of the writing light. Therefore, if the wavelength of the writing light is  $405\text{ nm}$ , the absorption maximum of the cyanine dyes falls in the range of  $365\text{ nm}$  ( $405\text{ nm} - 40\text{ nm}$ ) to  $475\text{ nm}$  ( $405\text{ nm} + 70\text{ nm}$ ).

In contrast thereto, the absorption maximum of an organic dye compound used in the herein claimed invention is longer than  $500\text{ nm}$ . In this regard, an organic dye compound used in the herein claimed invention is distinct from the cyanine dyes disclosed in Nanba.

Kanno discloses an optical recording medium which writes information with a laser beam having an oscillation wavelength in the range of  $500$  to  $700\text{ nm}$ . Thus, Kanno lacks feature (i) of the claimed optical recording medium. Moreover, Kanno neither discloses nor suggests feature (ii). It is respectfully submitted that Kanno has nothing to do with the claimed invention.

Ootaguro disclose that 4-N,N-diethylamino-4'-nitrosodiphenylamine is sensitive to light having a wavelength of about 440 nm and that an optical recording medium comprising that 4-N,N-diethylamino-4'-nitrosodiphenylamine absorbs light having a wavelength of 430 nm. However, Ootaguro teaches nothing about the combination use of that 4-N,N-diethylamino-4'-nitrosodiphenylamine with organic dye compounds having an absorption maximum at a wavelength longer than 500 nm to form an optical recording medium having features (i) to (v).

Applicant does not attack each reference separately, but rather points out that there is no motivation to combine all of these references to obtain the herein claimed optical recording medium. Maeda does not teach feature (ii), writing information on a recording layer with a writing light having a wavelength shorter than the absorption maximum of an organic dye compounds in the recording layer. While Usami teaches feature (vi), having a pit/groove width of less than 1 micron/pit at a track pitch or below 1 micron, there is no motivation to include the herein claimed dyes in a Usami medium, because the recording means in Usami is entirely different from that of the claimed optical recording medium.

Nanba discloses various kinds of lasers, but there is no disclosure of a laser having an oscillation wavelength of 405 nm. Additionally, there would be no motivation in Nanba to make an optical recording medium having the high recording capacity obtained with the herein claimed medium, as in 1984 the expectations for optical recoding media were much lower than today. Kanno lacks features (i) and (ii), namely, a laser beam with an oscillation wavelength of 405 nm as a writing light, and writing information on the recording layer with a writing light having a wavelength shorter than the absorption maximum of the organic dye compound in the recording layer. Although Ootaguro discloses that that 4-N,N-diethylamino-4'-nitrosodiphenylamine is sensitive to light having a wavelength of 450 nm, there is nothing in Ootaguro that suggests using 4 N,N-diethylamino-4'-nitrosodiphenylamine in an optical recording medium having the features claimed herein.

It is respectfully submitted that, while each reference discloses a part of the herein claimed optical recording medium, there is no motivation to combine these references.

Claims 8, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda and Usami in view of

Nanba, Kanno and Ootaguro and further in view of Kanno et al., . GB 2329751.

This rejection is respectfully traversed. Kanno has nothing to do with the system disclosed in Maeda, Usami, Nanba, Kanno and Ootaguro. Kanno'751 discloses an optical recording medium comprising vinyl dye sensitizers that are sensitive to light having a wavelength in the range of 500 to 700 nm and using a laser beam having an oscillation wavelength in the range of 500 to 700 nm as a writing light. From this, it is apparent that Kanno lacks feature I(i), using a laser beam with an oscillation wavelength of 305 nm as a writing light. In addition, Kanno neither discloses nor suggests features (ii), (iv) and (vi).

While Kanno'751 discloses that that 4-N,N-diethylamino-4'-nitrosodiphenylamine is sensitive to light having a wavelength of about 449 nm, Kanno'751 teaches nothing about the combination use of that 4-N,N-diethylamino-4'-nitrosodiphenylamine with organic dye compounds having an absorption maximum at a wavelength longer than 500 nm to form an optical recording medium having features (i) through (vi). Therefore, it is respectfully submitted that claims 8 and 14 are not obvious in view of the combination of Maeda and Usami



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in view of Nanba, Kanno and Ootaguro and further in view of  
Kanno 1751.

In view of the above, it is respectfully submitted  
that the claims are now in condition for allowance, and  
favorable action thereon is earnestly solicited.

Respectfully submitted,

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Table

Chemical Formula	$\lambda_{\text{max}}$ in methanol solution (nm)
19	767
20	544
21	545
22	545
23	502
24	543
25	547
26	546
27	525
28	525
29	530
30	536
31	525
32	540
33	550
34	around 580
35	524
36	around 580
37	around 580
38	around 580